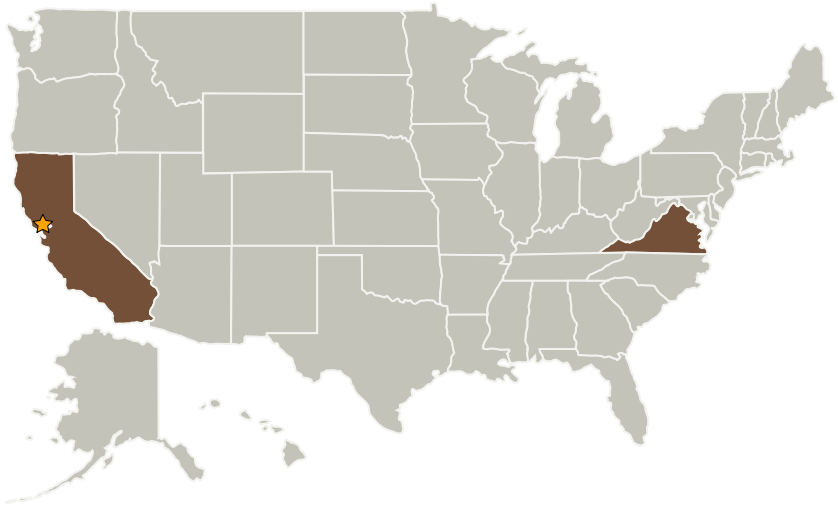
Wireless Data and Power Transfer on Small Spacecraft, Phase I

Completed Technology Project (2008 - 2008)

Project Introduction

Achieving low-cost space missions implies lowering all phases of mission development, including spacecraft design, assembly, integration and test. The concept of the wireless spacecraft bus is something most technical people are at least half familiar with - the half which includes wireless data transfer, something available on every computer laptop today. But wireless is not really wireless if the power is delivered through wires. Both power and data need to be delivered wirelessly for the true potential impact of wireless to be made on spacecraft design, build, integration, and test. Integrating today's commonplace wireless data systems into spacecraft would seem to be a logical step in spacecraft development, but to date has not been implemented widely if at all. AeroAstro proposes an innovative solution to design and build micro-spacecraft (and spacecraft components) harnessing the true promise of wireless systems. The overall objective of the proposal is to develop and demonstrate a truly wireless spacecraft bus - exhibiting not only wireless data, but also wireless power distribution. By definition, this wireless approach is inherently modular, and alleviates the need for wire harnesses of any type while simultaneously making staged built-in-test possible concurrently during spacecraft assembly.

Primary U.S. Work Locations and Key Partners



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Ames Research Center (ARC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
★Ames Research Center(ARC)	Lead Organization	NASA Center	Moffett Field, California
AeroAstro Corporation	Supporting Organization	Industry	Ashburn, Virginia

Primary U.S. Work Locations	
California	Virginia

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Bill Seng

Technology Areas

Primary:

- TX12 Materials, Structures, Mechanical Systems, and Manufacturing
  - TX12.2 Structures
    - TX12.2.3 Reliability and Sustainment